Substitute Form PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark OfficeAttorney's Docket No.
07917-062002Application No.
09/784,985**Information Disclosure Statement
by Applicant**

(Use several sheets if necessary)

Applicant
Hagan Bayley et al.Filing Date
February 15, 2001

Group Art Unit

37 CFR §1.98(b))

U.S. Patent Documents

Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
an	AA	H201	01/06/1987	Yager	436	151	
an	AB	4,867,973	09/19/1989	Goers et al.	424	181.1	
an	AC	4,975,278	12/04/1990	Senter et al.	424	178.1	
an	AD	5,777,078	07/07/1998	Bayley et al.	530	350	

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
an	AE	0 185 076 B1	08/05/1992	Europe	—	—		
an	AF	WO 94/25616	11/10/1994	WIPO	—	—		

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
an	AG	Adams et al., "Controlling Cell Chemistry with Caged Compounds," 1993, Annu. Rev. Physiol., 55:755-84.
an	AH	Amato, "Molecular Design Gets Into a Hole," 1992, Science, 255:684.
an	AI	Avila et al., "A New Immunotoxin Built by Linking a Hemolytic Toxin to a Monoclonal Antibody Specific for Immature T Lymphocytes," 1988, Int. J. Cancer, 42:568-71.
an	AJ	Avila et al., "A Carcinoembryonic Antigen-Directed Immunotoxin Built by Linking a Monoclonal Antibody to a Hemolytic Toxin," 1989, Int. J. Cancer, 43:926-29.
an	AK	Bayley, "Self-Assembling Biomolecular Materials in Medicine," 1994, J. Cell. Biochem., 56:168-70.
an	AL	Bayley, "Channels With Single Transmembrane Segments," 1994, News in Physiological Sciences, 9:45-46.
an	AM	Bayley, "Photoactivatable Drugs," 1987, Trends in Pharmacol. Sciences, 8:138-43.
an	AN	Bayley, "Triggers and Switches in a Self-Assembling Pore-Forming Protein," 1994, J. Cell. Biochem., 56:177-82.
an	AO	Bayley, "Novel Biomaterials: Genetically Engineered Pores," 1990, Dept. of Energy Grant No. DE-FG02-90R20018, Worcester Found, for Exptl. Biol.
an	AP	Boman, "Antibacterial Peptides; Key Components Needed in Immunity," 1991, Cell, 65:205-207.
an	AQ	Bowie et al., "Deciphering the Message in Protein..." Science, 247:1306-1310, 1990
an	AR	Braha et al., "Designed Protein Pores as Components for Biosensors," 1997, Chemistry & Biology, 497-505. <i>Vol. 4, No. 7</i>
an	AS	Brennan et al., "A Molecular Sensor System Based on Genetically Engineered Alkaline Phosphatase," 1995, Proc. Natl. Acad. Sci. 92:5783-5787.

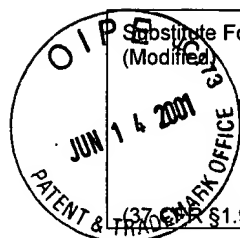
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cm	AT	Chang et al., "A Photogenerated Pore-Forming Protein," 1994, Chem & Biol., 2(6):391-400.
	AU	Cheley et al., "Type II Regulatory Subunits of cAMP-dependent Protein Kinase and Their Binding Proteins in the Nervous System of Aplysia californica," 1994, J. Biol. Chem., 269L:2911-20.
	AV	Chovnick et al., "A Recombinant Membrane-Acting Immunotoxin," 1991, Cancer Res., 51:465-467.
	AW	Cornell et al., "A Biosensor That Uses Ion-Channel Switches," 1997, Nature, 387:580-583. 5 June 1997
	AX	Dawson et al., "Synthesis of Proteins by native Chemical Ligation," 1994, Science, 265:776-79. Vol. 266
an	AY	Durell et al., "Theoretical Models of the Ion Channel Structure of Amyloid β -Protein," 1994, Biophys. J., 67:2137-45.
an	AZ	Egholm et al., "PNA hybridizes to Complementary Oligonucleotides Boeying the Watson-Crick Hydrogen-bonding Rules," 1993, Nature, 365:566-68.
an	AAA	Ellman et al., "Site-Specific Incorporation of Novel Backbone Structures into Proteins," 1992, Science, 255:197-200.
an	ABB	Ericksson et al., Crystallographic Studies of Inhibitor Binding Sites in Human Carbonic Anhydrase II: A Pentacoordinated Binding of the SCN Ion to the Zinc at High pH," 1988, Proteins: Structure, Function, and Genetics, 4:283-293.
	ACC	Goldmacher et al., "Photoactivation of Toxin Conjugates," 1992, Bioconjugate Chem., 3:104-107.
	ADD	Gouaux et al., "Subunit Stoichiometry of Staphylococcal α -hemolysin in Crystals and on Membranes; A Heptameric Transmembrane Pore," 1994, Proc. Natl. Acad. Sci. USA, 91:12828-31.
	AEE	Gray et al., "Primary Sequence of the Alpha Toxin Gene from Staphylococcus Aureus Wood 46," 1984, Infect. Immun., 46:615-618.
	AFF	Hanke et al., "Planar Lipid Bilayers" 1993, Academic Press., Table of Contents
	AGG	Harris et al., "Therapeutic Antibodies-the Coming of Age," 1993, TIBTECH, 11:42-44. Feb 1993
	AHH	Hazum et al., "A Photocleavable Protecting Group for the Thiol Function of Cysteine," 1980, Peptides 1980: Proceedings of Sixteenth European Peptide Symposium, pp. 105-106.
	AII	Hilvert, "Extending the Chemistry of Enzymes and Abzyes," 1991, Trends Biotechnol., 9:11-17.
	AJJ	Hird et al., "Immunotherapy with Monoclonal Antibodies," 1990, Genes and Cancer, 17:184-189.
	AKK	Huennekens, "Tumor targeting: activation of prodrugs by enzyme-monoclonal antibody conjugates," 1994, TIBTECH., Vol. 12.
	ALL	Huston et al., "Protein Engineering of Single-Chain Fv Analogs and Fusion Proteins" 1991, Methods In Enzymology., 203:46-89.
	AMM	Ippolito et al., "Structure-assisted Redesign of a Protein-Zinc-Binding Site with Femtomolar Affinity," 1995 Proc. Natl. Acad. Sci., 92:5017-5021.
	ANN	Kasianowicz et al., "Genetically Engineered Pores as Metal Ion Biosensors," 1994, Mat. Res. Soc. Symp. Proc. 330:217-23.
	AOO	Koltchine et al., "Homomeric Assemblies of NMDAR1 Splice Variants are Sensitive to Ethanol," 1993, Neuroscience Letters, 152:13-16.
an	APP	Kraules, P.J., "MOLSCRIPT" A Program To Product Both Detailed and Schematic Plots of Protein Structures." 1991, J. Appl. Cryst., 24:946-950.

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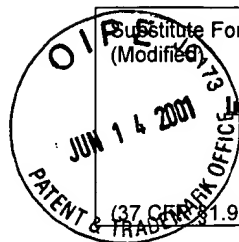
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Am	AQQ	Krishnasastri et al., "Surface Labeling of Key Residues During Assembly of the Staphylococcal α -Hemolysin," 1994, FEBS Letters, 356:66-71.
	ARR	Liotta et al., "Cancer Metastasis and Angiogenesis: An Imbalance of Positive and Negative Regulation," 1991, Cell, 64:327-36.
	ASS	Lipkin, "Controlling Life's Gateway Opening and Closing Cell Membranes on Demand," 1994, Science News, 146:204-205.
	ATT	Maiti et al., "Tolerogenic Conjugates of Xenogeneic Monoclonal Antibodies with Monomethoxypolyethylene Glycol. I. Induction . Xenogeneic Monoclonal Antibodies," 1988, Int. J. Cancer, 3:17-22.
	AUU	Marriott et al., "Photomodulation of the Nucleating Activity of a Photocleavable Crosslinked Actin Dimer," 1992, Biochemistry International, 26:943-951.
	AVV	Merritt et al., "Raster3D Version 2.0. A Program for Photorealistic Molecular Graphics," 1994, Biological Crystallography, D50:869-873.
	AWW	Montal et al., "Formation of Bimolecular Membranes from Lipid Monolayers and a Study of Their Electrical Properties," Proc. Nat. Acad. Sci. USA, 69:3561-3566.
	AXX	Murray, "Cyclin-dependent kinases: regulators of the cell cycle and more," 1994, Chemistry & Biology, 1:191-195.
Am	AYY	Nielsen et al., "Sequence-Selective Recognition of DNA by Strand Displacement with a Thymine-Polyamide," 1991, Science, 254:1497-1500.
Am	AZZ	Ngo et al., "The Protein Folding Problem and Tertiary...", pp. 491-495, Eds.: Mertz and Le Grand; Birkhauser, Boston, 1994
Am	AAAA	Noren et al., "A General Method for Site-Specific Incorporation of Unnatural Amino Acids into Proteins 1989, Science, 244:182-188.
Am	ABBB	Olejnik et al., "Photocleavable biotin derivatives: A Versatile Approach For the Isolation of Biomolecules," 1995, Proc. Natl. Acad. Sci. USA, 92:7590-7594.
Am	ACCC	O'Reilly et al., "Angiostatin: A Novel Angiogenesis Inhibitor That Mediates the Suppression of Metastases by a Lewis Lung Carcinoma," 1994, Cell, 79:315-328.
Am	ADDD	Osband et al., "Problems in the Investigational Study and Clinical Use of Cancer Immunotherapy," 1990 Immunology Today, 11:193-95.
Am	AEEE	Panchal et al., "Differential Phosphorylation of of Neuronal Substrates by Catalytic Subunits of cAMP-dependent Protein Kinase with Alternative N Termini," 1993, J. Biol. Chem., 268:23722-23730.
Am	AFFF	Pastan et al., "Immunotoxins," 1986, Cell 47:641-648.
	AGGG	Pederzoli et al., "Biochemical and Cytotoxic Properties of Conjugates of Transferrin with Equinatoxin II, a Cytolysin from a Sea Anemone," 1994, Bioconjugate Chem., 6:166-173.
	AHHH	Regen et al., "Supramolecular Surfactants: Amphiphilic Polymers Designed to Disrupt Lipid Membranes," 1989 Biochem. and Biophys. Res. Comm., 159:566-571.
	AIII	Senter et al., "Novel Photocleavable Protein Crosslinking Reagents and Their Use in the Preparation of Anti-body-Toxin Conjugates," 1985, Photochemistry and Photobiology, 42:231-237.
	AJJJ	Song et al., Structure of Staphylococcal α Alpha Toxin-Recent Advances," 1988, Toxicon, 26:51-65.
Am	AKKK	Stetler et al., "The Activation of Human Type IV Collagenase Proenzyme" 1989, The Activation of Human IV Collagenase Proenzyme," 264:1353-1356.

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A	ALLL	Thelestam et al., "Staphylococcal Alpha Toxin - Recent Advances," 1988, TOXICON, 26:51-65
	AMMM	Thiele and Fahrenholz, "Photocleavable Biotinylated Ligands for Affinity Chromatography," 1994, Analytical Biochemistry, 218:330-337.
	ANNN	Thompson et al., "Photocleavable Nitrobenzyl-Protein Conjugates," 1993, Biochem. and Biophys. Res. Comm., 201:1213-1219.
	AOOO	Thompson et al., "Enzyme-Based Fiber Optic Zinc Biosensor," 1993, American Chemical Society., 65:730-734.
	APPP	Tobkes et al., "Secondary Structure and Assembly Mechanism of an Oligomeric Channel Protein," 1985, Biochemistry, 24:1915-1919.
	AQQQ	Vivaudou et al., "Skeletal Muscle ATP-Sensitive K ⁺ Channels Recorded from Sarcolemmal Blebs of Split Fibers: ATP Inhibition is Reduced by Magnesium and ADP," 1991, J. Membrane Biol., 122:165-175
	ARRR	Walker et al., "Restoration of pore-forming activity in staphylococcal α -hemolysin by targeted covalent modification," 1995, Protein Engineering, 8:491-495.
	ASSS	Walker et al., "Genetically-Engineered Protease-Activated Triggers in a Pore-Forming Protein," 1994 Mat. Res. Soc. Symp. Proc., 330:209-215.
	ATTT	Walker et al., "An intermediate in the Assembly of a Pore-Forming Protein Trapped with a Genetically-Engineered Switch," 1995, Chemistry & Biology, 2:99-105.
	AUUU	Walker et al., "A pore-forming Protein with a Metal-Actuated Switch," 1994, Protein Engineering, 7:655-662
An	AVVV	Walker et al., "A pore-forming protein with a protease-activated trigger," 1994, Protein Engineering, 7:91-97.
A	AWWW	Walker et al., "Assembly of the Oligomeric Membrane Pore Formed by Staphylococcal α -Hemolysin Examined by Truncation Mutagenesis," 1992, J. Biol. Chem., 267:21782-21786.
A	AXXX	Walker et al., "Functional Expression of the α -Hemolysin of Staphylococcus Aureus in Intact Escherichia Coli and in Cell Lysates," 1992, J. Biol. Chem., 267:10902-10909.
An	AYYY	Walker et al., "Functional Complementation of Staphylococcal α -Hemolysin Fragments," 1993, J. Biol. Chem., 268:5285-5292.
A	AZZZ	Walker et al., "Key residues for membrane binding, oligomerization...", J. Biol. Chem., 270:23065-23071
An	AAAAA	Wells, "Additivity of Mutational Effects in Proteins," Biochemistry, 29:8509-8517-1990
An	ABBBB	Wittung et al., "DNA-like double helix formed by peptide nucleic acid," 1994, Nature, 368:561-563 April 7, 1994
An	ACCCC	Zorn et al., "Halothane Acts on Many Potassium Channels, Including a Minimal Potassium Channel," 1993, Neuroscience Letters, 161:81-84.

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